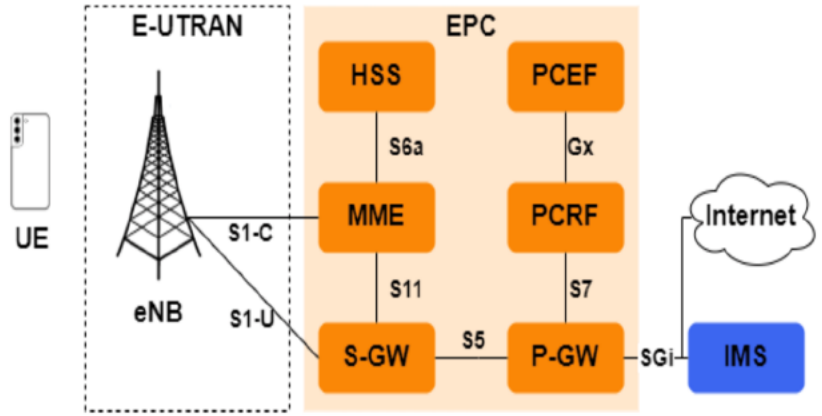
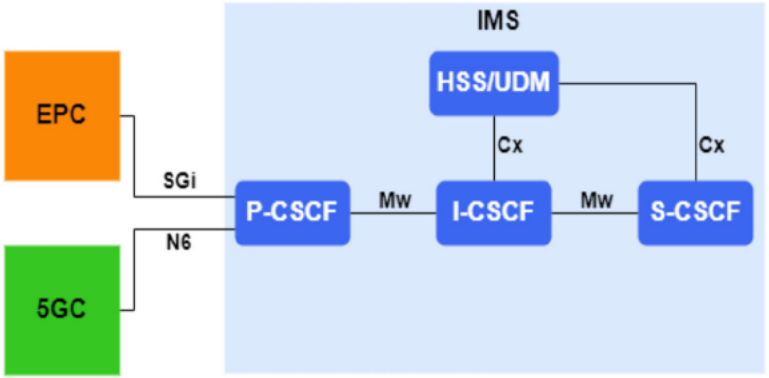
EXHIBIT 11

U.S. Patent No. 7,599,379

Claim 7	Identification
[7pre] A wireless architecture, comprising:	To the extent the preamble is limiting, the Defendants operate a wireless architecture. The Accused Architecture provides VoLTE (Voice over LTE) services. For example, VoLTE enables high-quality voice calls over the LTE network with low latency and bandwidth consumption. Moreover, VoLTE supports rich communication services, such as video calling, instant messaging, or presence.  Fig. 1: High-level LTE Architecture Source: Analysis of Power consumption in 4G VoLTE and 5G VoNR over IMS network, 2022 IEEE 27th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD).
[7a] a first network type operable to communicate with a station; and	The Accused Architecture comprises a first network type operable to communicate with a station. An example of "first network type" is VoLTE cellular network.

Claim 7	Identification
	For example, the Accused Architecture comprises at least an LTE Radio Access Network (RAN) that is operable to communicate with stations according to the LTE standard.
[7b] an interoperability node operable on the architecture to:	The Accused Architecture comprises an interoperability node operable on the architecture. For example, the Home Subscriber Server (HSS), either alone or with other components on the IMS network, is an interoperability node.  Fig. 3: IMS Core Architecture Source: Analysis of Power consumption in 4G VoLTE and 5G VoNR over IMS network, 2022 IEEE 27th International Workshop on Computer Aided Modeling and Design of Communication Links and Networks (CAMAD). The HSS maintains the subscriber information for the 4G network. The HSS is also the master IMS database that provides subscription, security and mobility information for the IMS network.
[7c] communicate with multiple different network protocols;	The interoperability node communicates with multiple different network protocols.

Claim 7	Identification
	The HSS communicates with 3GPP LTE 4G protocol (one example of a network protocol) and with the Session Initiation Protocol (SIP) (another example of a network protocol) on the IMS network.
[7d] consolidate the registration process on multiple different network protocols; and	The interoperability node consolidates the registration process on multiple different network protocols including on VoLTE and SIP.

Claim 7	Identification

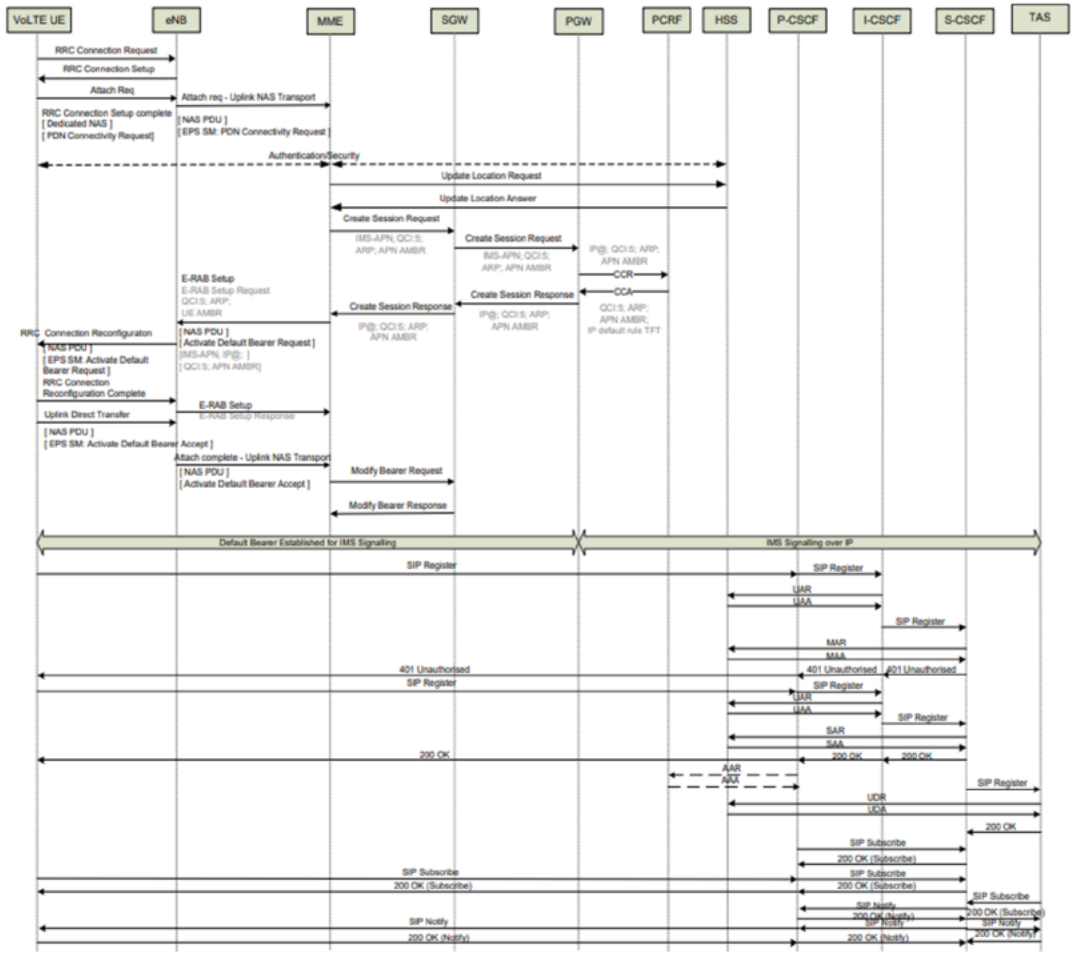


Figure 3: VoLTE UE Attachment and IMS Registration message sequence

Source: https://www.gsma.com/futurenetworks/wp-content/uploads/2014/10/FCM.01-VoLTE-Service-Description-and-Implementation-Guidelines-Version-2.0.pdf

Claim 7	Identification
	"7.2.1 IMS registration via CS access 7.2.1.1 Overview If the MSC Server enhanced for ICS implements the Combined CS Access Authentication procedure as specified in Annex G, the UE accessing the network via CS domain shall be authenticated and registered by this procedure, otherwise the following applies. The UE may register (attach) in the CS domain whenever in CS coverage. The existing mobility management mechanisms are used in the UE and the CS network. When performing a successful Location Update for the UE, the MSC Server has received the subscriber data from the HSS/HLR. This subscriber data may include an optional flag per VPLMN." *See* 3GPP TS 23.292 V.16.0.0 at pp. 22-24. When a station obtains connectivity from an LTE network, the IMS registration process is described in Section 5.2.2.3 of 3GPP TS 23.228. The interoperability node in the Accused Architecture consolidates the registration process by receiving the Registration Request message. "5.2.2.3 Registration information flow – User not registered The application level registration can be initiated after the registration to the access is performed, and after IP connectivity for the signalling has been gained from the access network. For the purpose of the registration information flows, the user is considered to be always roaming. For user roaming in their home network, the home network shall perform the role of the visited network elements and the home network elements.

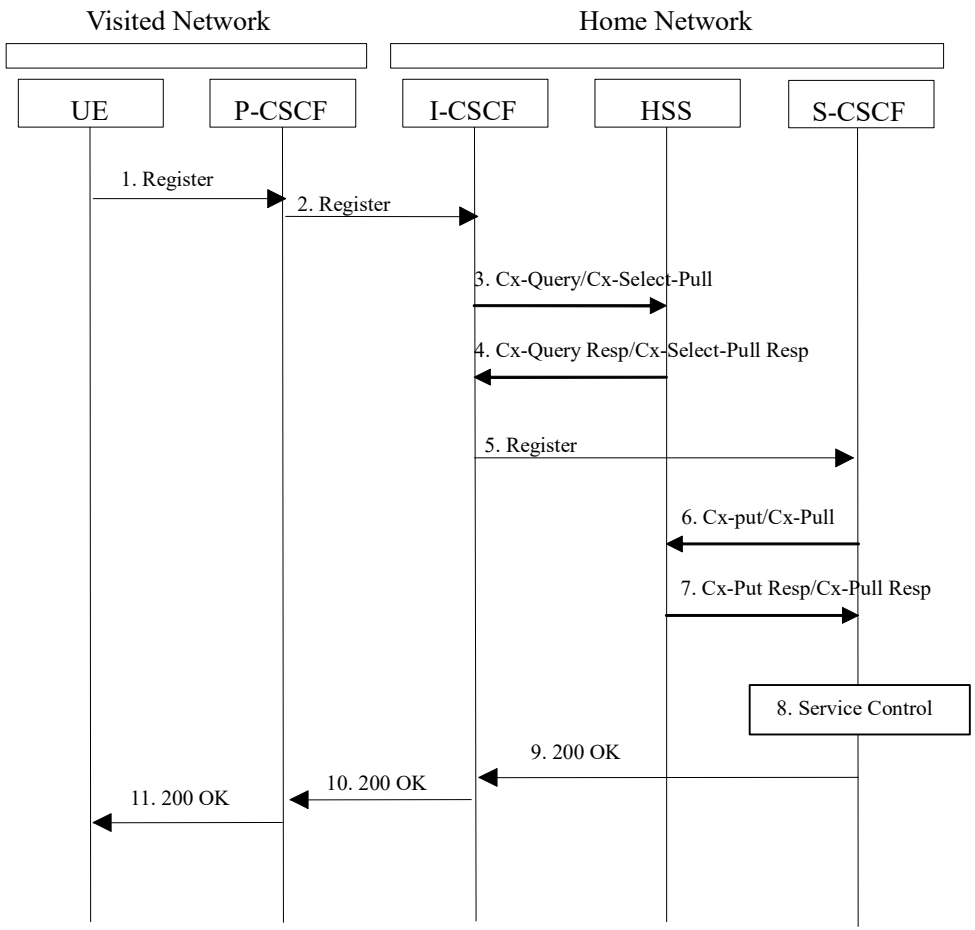


Figure 5.1: Registration – User not registered

1. After the UE has obtained IP connectivity, it can perform the IM registration. To do so, the UE sends the Register information flow to the proxy (Public User Identity, Private User Identity, home network domain name, UE IP address, Instance Identifier, GRUU Support Indication).

Claim 7	Identification
	2. Upon receipt of the register information flow, the P-CSCF shall examine the "home domain name" to discover the entry point to the home network (i.e. the I-CSCF). The proxy shall send the Register information flow to the I-CSCF (P-CSCF address/name, Public User Identity, Private User Identity, P-CSCF network identifier, UE IP address). A name-address resolution mechanism is utilised in order to determine the address of the home network from the home domain name. The P-CSCF network identifier is a string that identifies at the home network, the network where the P-CSCF is located (e.g., the P-CSCF network identifier may be the domain name of the P-CSCF network). 3. The I-CSCF shall send the Cx-Query/Cx-Select-Pull information flow to the HSS (Public User Identity, Private User Identity, P-CSCF network identifier). The HSS shall check whether the user is registered already. The HSS shall indicate whether the user is allowed to register in that P-CSCF network (identified by the P-CSCF network identifier) according to the User subscription and operator limitations/restrictions if any. 4. Cx-Query Resp/Cx-Select-Pull Resp is sent from the HSS to the I-CSCF. It shall contain the S-CSCF name, if it is known by the HSS, or the S-CSCF capabilities, if it is necessary to select a new S-CSCF. When capabilities are returned, the I-CSCF shall construct a name from the capabilities returned. If the checking in HSS was not successful the Cx-Query Resp shall reject the registration attempt. 5. The I-CSCF, using the name of the S-CSCF, shall determine the address of the S-CSCF through a name-address resolution mechanism. The name-address resolution mechanism is allowed to take the load information of the S-CSCFs (e.g. obtained using network management procedures) into consideration when deciding the address of the S-CSCF. The I-CSCF also determines the name of a suitable home network contact point, possibly based on information received from the HSS. I-CSCF shall then send the register information flow (P-CSCF address/name, Public User Identity, Private User Identity, P-CSCF network identifier, UE IP address to the selected S-CSCF. The home network

Claim 7	Identification
	contact point will be used by the P-CSCF to forward session initiation signalling to the home network. The S-CSCF shall reject the registration if the number of registered contact addresses for a Public User Identity from the same UE exceeds the limit of simultaneous registrations configured at the S-CSCF. The S-CSCF shall also reject the registration from separate UEs if the allowed number of simultaneous registrations according to the S-CSCF configuration or per subscribed value for a Public User Identity received from the HSS exceeds the limit of simultaneous registrations. The S-CSCF shall store the P-CSCF address/name, as supplied by the visited network. This represents the address/name that the home network forwards the subsequent terminating session signalling to the UE. The S-CSCF shall store the P-CSCF Network ID information. 6. The S-CSCF shall send Cx-Put/Cx-Pull (Public User Identity, Private User Identity, S-CSCF name) to the HSS. 7. The HSS shall store the S-CSCF name for that user and return the information flow Cx-Put Resp/Cx-Pull Resp (user information) to the S-CSCF. The user information passed from the HSS to the S-CSCF shall include one or more names/addresses information which can be used to access the platform(s) used for service control while the user is registered at this S-CSCF. The S-CSCF shall store the information for the indicated user. In addition to the names/addresses information, security information may also be sent for use within the S-CSCF. 8. Based on the filter criteria, the S-CSCF shall send register information to the service control platform and perform whatever service control procedures are appropriate. 9. The S-CSCF shall return the 200 OK information flow (home network contact information, a GRUU set) to the I-CSCF. 10. The I-CSCF shall send information flow 200 OK (home network contact information, a GRUU set) to the P-CSCF. The I-CSCF shall release all registration information after sending information flow 200 OK.

Claim 7	Identification
	11. The P-CSCF shall store the home network contact information, and shall send information flow 200 OK (a GRUU set) to the UE. The P-CSCF may subscribe to notifications of the status of the IMS Signalling connectivity from PCRF/PCF (see TS 23.203 [54] for more details). If the S-CSCF receives the priority information of the MPS subscribed-UE as a part of user profile from the HSS, the S-CSCF provides the priority information to the P-CSCF and the P-CSCF stores this information for the MPS-subscribed UE." *See* 3GPP TS 23.228 V.16.0.0 at pp. 75-76.
[7e] register a station in one or more other network types by:	The interoperability node registers a station in one or more other network types: • Example of "first network type": VoLTE cellular network • Example of "other network type": IP Multimedia Subsystem (IMS). As discussed in [7d] above the interoperability node registers a station in the IMS.

[7f] identifying a particular protocol specific registration process from a number of protocol specific registration processes;	The interoperability node identifies a particular protocol specific registration process from a number of protocol specific registration processes. As discussed in [7d] above, the protocol specific registration processes depend on the type of access that the station has. "**3.2.1 VoLTE UE Attachment and IMS Registration** **3.2.1.1 General** A VoLTE UE, under LTE coverage, shall automatically perform an LTE Attach followed by an IMS registration for VoLTE, if the network supports VoLTE (for further details on the conditions for IMS registration see section 2.2.1 of GSMA IR.92 [54]). This ensures that the VoLTE UE shall be available for VoLTE services (i.e. incoming calls, outgoing calls and supplementary services), similar to the voice experience in today's CS network deployments." Source: https://www.gsma.com/futurenetworks/wp-content/uploads/2014/10/FCM.01-VoLTE-Service-Description-and-Implementation-Guidelines-Version-2.0.pdf **"3.2.1.3 Detailed Description VoLTE UE Attach** …. The MME sends an Attach Accept to the eNodeB with the IMS-APN, IP Address for the UE, QoS parameters, PCO, IMS Voice over PS supported indication, TAI list, ESM message container, etc. The eNodeB communicates with the UE to update the RRC configuration and includes the information received from the core network as part of the create session request. The UE sends the Attach Complete message to the eNodeB, which forwards to the MME. At this time, the UE is capable of sending uplink packets. The MME initiates a Modify Bearer Request to the SGW including the EPS Bearer Identity, eNodeB address, and eNodeB TEID. The SGW acknowledges the request to the MME and is capable of sending downlink packets. At this stage, the VoLTE UE is attached to the network via a default bearer that is established for IMS Signalling." Source: https://www.gsma.com/futurenetworks/wp-content/uploads/2014/10/FCM.01-VoLTE-Service-Description-and-Implementation-Guidelines-Version-2.0.pdf

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[7g] utilizing the particular protocol specific registration process to directly access information from a network being signaled;	The interoperability node utilizes the particular protocol specific registration process to directly access information from a network being signaled. The network being signaled is the home network of the station. The roaming user attaches in a visited network and registers for IMS services in its respective home network. As described in [7d] above, "… [t]he P-CSCF shall examine the "home domain name" to discover the entry point to the home network (i.e. the I-CSCF). The proxy shall send the Register information flow to the I-CSCF". Steps 3 and 4 of the registration process in [7d] above describe that "3. The I-CSCF shall send the Cx-Query/Cx-Select-Pull information flow to the HSS (Public User Identity, Private User Identity, P-CSCF network identifier). The HSS shall check whether the user is registered already. The HSS shall indicate whether the user is allowed to register in that P-CSCF network (identified by the P-CSCF network identifier) according to the User subscription and operator limitations/restrictions if any. 4. Cx-Query Resp/Cx-Select-Pull Resp is sent from the HSS to the I-CSCF. It shall contain the S-CSCF name, if it is known by the HSS, or the S-CSCF capabilities, if it is necessary to select a new S-CSCF. When capabilities are returned, the I-CSCF shall construct a name from the capabilities returned." *See* 3GPP TS 23.228 V16.0.0 pp. 75-76. By sending the Cx-Query/Cx-Select-Pull information flow to the HSS the interoperability node is utilizing the particular protocol-specific registration process to directly access information from a network being signaled. The information includes the "S-CSCF name, if it is known by the HSS, or the S-CSCF capabilities".

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[7h] and completing the particular protocol specific registration process based upon the accessed information.	The interoperability node completes the particular protocol specific registration process based upon the accessed information. As discussed in [7d] above, after steps 3 and 4, the interoperability completes the particular protocol-specific registration process based upon the accessed information. In steps 10 and 11 the interoperability node completes the protocol-specific registration process by "sending information flow 200 OK" to the station.